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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/055,526	11/13/2001	David M. Kaufman	D2551	9367

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EXAMINER

SHANG, ANNAN Q

ART UNIT	PAPER NUMBER
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2617

DATE MAILED: 02/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/055,526

Applicant(s)

KAUFMAN, DAVID M.

Examiner

Annan Q. Shang

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/01, 7/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 5-8, 12-15 and 18-19 are rejected under 35 U.S.C. 102(b) as being anticipated by **Pavlic et al (5,130,664)**.

As to claim 1, note the **Pavlic** reference figure 1, discloses one GHz CATV repeater system and further discloses a directional coupler system comprising:

An input diplex filter or first splitting means (Input DF-14 of Trunk Section 'TS' 11) for splitting signal into a high band signal (Highpass Filter 14a or H) and a low band signal (Lowpass Filter 14b or L, fig.1 and col.3, lines 32-53);

A high band directional coupler or a first directional coupler (HBDC-20), where the high band signal is coupled to an input of the high band directional coupler (col.4, lines 12-42);

A low band directional coupler or second directional coupler (LBDC-36), where the low band signal is coupled to an input of the low band directional coupler and arranged in a band splitting scheme (col.5, line 2-6);

A tap diplex filter (DF-14 of Distributor 'D' 12, col.3, lines 32-36) coupled to a tap (D-12) of each of the high band directional coupler and the low band directional coupler (col.3, lines 44-53 and col.4, lines 30-45) and

An output diplex filter or second splitting means (Output DF-14 of TS-11) for receiving and combining a high band signal output from the high band directional coupler and a low band signal output from the low band directional coupler (col.3, line 54-col.4, line 11 and line 30-col.5, line 2).

As to claim 5, Pavlic further discloses where the low directional coupler is ferrite transformer technology (col.5, lines 15-38).

As to claim 6, Pavlic further discloses where the low band signal is operated from 5-1000 MHz (col.3, lines 49-53).

As to claim 7, Pavlic further discloses where the input diplex filter, the tap filter and the output diplex filter are lumped component bandsplitting filters (col.3, lines 44-53, col.4, line 30-col.5, line 14).

As to claim 8, the claimed "An improved wideband bandwidth directional coupler..." is composed of the same structural element that were discussed with respect to the rejection of claim 1.

Claim 12 is met as previously discussed with respect to claim 5.

Claim 13 is met as previously discussed with respect to claim 6.

Claim 14 is met as previously discussed with respect to claim 7

As to claim 15, the claimed "A method for improving wideband bandwidth a coaxial cable transmission system by providing an improved bandwidth directional

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coupler..." is composed of the same structural element that were discussed with respect to the rejection of claim 1.

Claim 18 is met as previously discussed with respect to claim 6.

Claim 19 is met as previously discussed with respect to claim 7.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2-4, 9-11 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Pavlic et al (5,130,664)** as applied to claims 1, 8 and 15 above, and in view of **Crane (4,731,614)**.

As to claims 2-4, Pavlic teaches a thick film hybrid circuit board with components, but fails to explicitly teach where the DC has a one octave, operates from 1200-2400 MHz and the High band directional coupler is stripline or microstrip technology.

However, note the **Crane** reference figures 1-3, discloses a distribution network of components, such as directional couplers, conductors, etc., composed of printed lines, stripline, microstrip, etc., where the directional couplers possess a bandwidth of an octave and also achieves broad bandwidths of GHz frequencies (col.5, lines 3-16 and col.6, lines 20-39).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teaching of Crane into the system of Pavlic to reduce circuit complexity and weight and further coupled directional couplers together to achieve a broad bandwidths of frequencies.

Claims 9-11 are meet as previously discussed with respect to claims 2-4.

Claims 16-17 are meet as previously discussed with respect to claims 2-4.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Eckert et al (6,745,046) disclose an integrated antenna coupler element.

Tsuruoka (5,666,090) discloses high-frequency coupler.

Ludwig et al (5,825,260) disclose directional coupler for high frequency range.

Iwer (4,216,446) discloses quarter wave microstrip directional coupler.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Annan Q. Shang** whose telephone number is **571-272-7355**. The examiner can normally be reached on **700am-400pm**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Christopher S. Kelley** can be reached on **571-272-7331**. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the **Electronic Business Center (EBC)** at 866-217-9197 (toll-free).



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